Amendments to the Claims:

Please amend Claims 1, 6, 14, 17, 19, and 22 as indicated in the following listing of claims, which replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for depositing a film on a substrate wafer disposed within a process chamber, the method comprising:

providing a first gaseous mixture to the process chamber;

inductively generating a plasma from the first gaseous mixture with a toroidal plasma source ~~disposed within the process chamber~~ to deposit a first portion of the film on the substrate wafer, the toroidal plasma source being disposed within the process chamber and comprising a core and a coil;

thereafter, flowing an etchant gas into the process chamber without terminating the plasma to provide a net etching back of part of the first portion of the film; and

thereafter, providing a second gaseous mixture to the process chamber without terminating the plasma to deposit a second portion of the film on the substrate wafer.

2. (Original) The method recited in claim 1 further comprising applying an electrical bias to the substrate while flowing the etchant gas.

3. (Original) The method recited in claim 2 wherein the bias has a power density approximately between 0.9 W/cm^2 and 3.2 W/cm^2.

4. (Original) The method recited in claim 1 wherein the second gaseous mixture is substantially the same as the first gaseous mixture.

5. (Original) The method recited in claim 1 wherein the first and second gaseous mixtures each include a silicon-containing gas and an oxygen-containing gas, and wherein the etchant gas includes a fluorine-containing gas.

6. (Currently Amended) A method for depositing a film on a substrate wafer disposed within a process chamber, the method comprising:

providing a first gaseous mixture to the process chamber, the first gaseous mixture comprising a first deposition gas and an etchant gas; and

inductively generating a poloidal plasma from the first gaseous mixture with a toroidal plasma coupling structure ~~disposed within the process chamber~~ to simultaneously deposit a first portion of the film on the substrate wafer and etch the film, wherein:

the toroidal plasma coupling structure is disposed within the process chamber and comprises a core and a coil; and

the poloidal plasma includes poloidal ion flow along field lines substantially parallel to a surface interior to the process chamber, the surface disposed to separate the poloidal plasma from the toroidal plasma coupling structure.

7. (Original) The method recited in claim 6 further comprising providing a second gaseous mixture to the process chamber without terminating the plasma, the second gaseous mixture comprising a second deposition gas, to deposit a second portion of the film.

8. (Original) The method recited in claim 6 further comprising applying an electrical bias to the substrate.

9. (Original) The method recited in claim 8 wherein the bias has a power density approximately between 0.9 W/cm^2 and 3.2 W/cm^2.

10. (Original) The method recited in claim 8 wherein the bias has a power density approximately between 0.9 W/cm^2 and 1.6 W/cm^2.

11. (Original) The method recited in claim 6 wherein the plasma is a high-density plasma.

12. (Original) The method recited in claim 6 wherein the second deposition gas is substantially the same as the first deposition gas.

13. (Original) The method recited in claim 6 wherein the first deposition gas includes a silicon-containing gas and an oxygen-containing gas, and wherein the etchant gas includes a fluorine-containing gas.

14. (Withdrawn – Currently Amended) A computer-readable storage medium having a computer-readable program embodied therein for directing operation of a substrate processing system including a process chamber; a toroidal plasma coupling structure disposed within the process chamber and comprising a core and a coil; a substrate holder; and a gas delivery system configured to introduce gases into the process chamber, the computer-readable program including instructions for operating the substrate processing system to form a film on a substrate wafer disposed within the process chamber in accordance with the following:

providing a first gaseous mixture to the process chamber, the first gaseous mixture comprising a first deposition gas and an ~~etching~~ etchant gas;

inductively generating a poloidal plasma from the first gaseous mixture with the toroidal plasma coupling structure to simultaneously deposit a first portion of the film on the substrate and etch the film, wherein the poloidal plasma includes poloidal ion flow along field lines substantially parallel to a surface interior to the process chamber, the surface disposed to separate the poloidal plasma from the toroidal plasma coupling structure.

15. (Withdrawn) The computer-readable storage medium recited in claim 14, the computer-readable program further including instructions for applying an electrical bias to the substrate.

16. (Withdrawn) The computer-readable storage medium recited in claim 14, the computer-readable program further including instructions for providing a second gaseous mixture to the process chamber without terminating the plasma, the second gaseous mixture comprising a second deposition gas, to deposit a second portion of the film.

17. (Withdrawn — Currently Amended) A computer-readable storage medium having a computer-readable program embodied therein for directing operation of a substrate processing system including a process chamber; a plasma generation system having a toroidal

plasma source disposed within the process chamber and comprising a core and a coil; a substrate holder; and a gas delivery system configured to introduce gases into the process chamber, the computer-readable program including instructions for operating the substrate processing system to form a film on a substrate wafer disposed within the process chamber in accordance with the following:

providing a first gaseous mixture to the process chamber;

inductively generating a plasma from the first gaseous mixture with the toroidal plasma source;

thereafter, flowing an etchant gas into the process chamber without terminating the plasma to provide a net etching back of part of the first portion of the film; and

thereafter, providing a second gaseous mixture to the process chamber without terminating the plasma to deposit a second portion of the film on the substrate.

18. (Withdrawn) The computer-readable storage medium recited in claim 17, the computer-readable program further including instructions for applying an electrical bias to the substrate while flowing the etchant gas.

19. (Withdrawn – Currently Amended) A substrate processing system comprising:

a housing defining a process chamber;

a plasma generating system operatively coupled to the process chamber and including a toroidal plasma coupling structure disposed within the process chamber, the toroidal plasma coupling structure comprising a core and a coil;

a substrate holder configured to hold a substrate wafer within the process chamber during substrate processing;

a gas-delivery system configured to introduce gases into the process chamber, including sources for a silicon-containing gas, a fluorine-containing gas, and an oxygen-containing gas;

a pressure-control system for maintaining a selected pressure within the process chamber;

a controller for controlling the plasma generating system, the gas-delivery system, and the pressure-control system; and

a memory coupled to the controller, the memory comprising a computer-readable medium having a computer-readable program embodied therein for directing operation of the substrate processing system, the computer-readable program including

instructions to control the gas-delivery system to provide a first gaseous mixture to the process chamber, the first gaseous mixture comprising a first deposition gas that includes the silicon-containing gas and the oxygen-containing gas and an etchant gas that includes the fluorine-containing gas; and

instructions to control the plasma generating system to inductively generate a poloidal plasma from the first gaseous mixture to simultaneously deposit a first portion of the film on the substrate wafer and etch the film, wherein the poloidal plasma includes poloidal ion flow along field lines substantially parallel to a surface interior to the process chamber, the surface disposed to separate the poloidal plasma from the toroidal plasma coupling structure.

20. (Withdrawn) The substrate processing system recited in claim 19, the computer-readable program further including instructions for applying an electrical bias to the substrate.

21. (Withdrawn) The substrate processing system recited in claim 19, the computer-readable program further including instructions for providing a second gaseous mixture to the process chamber without terminating the plasma, the second gaseous mixture comprising a second deposition gas, to deposit a second portion of the film.

22. (Withdrawn — Currently Amended) A substrate processing system comprising:

a housing defining a process chamber;

a plasma generating system operatively coupled to the process chamber, the plasma generating system including a toroidal plasma source disposed within the process chamber and comprising a core and a coil;

a substrate holder configured to hold a substrate wafer within the process chamber during substrate processing;

a gas-delivery system configured to introduce gases into the process chamber, including sources for a silicon-containing gas, a fluorine-containing gas, and an oxygen-containing gas;

a pressure-control system for maintaining a selected pressure within the process chamber;

a controller for controlling the plasma generating system, the gas-delivery system, and the pressure-control system; and

a memory coupled to the controller, the memory comprising a computer-readable medium having a computer-readable program embodied therein for directing operation of the substrate processing system, the computer-readable program including

instructions to control the gas-delivery system to provide a first gaseous mixture to the process chamber;

instructions to control the plasma generating system to inductively generate a plasma from the first gaseous mixture with the toroidal plasma source to deposit a first portion of the film on the substrate wafer;

instructions to control the gas-delivery system to flow, thereafter, an etchant gas into the process chamber without terminating the plasma to provide a net etching back of part of the first portion of the film; and

instructions to control the gas-delivery system to provide, thereafter, a second gaseous mixture to the process chamber without terminating the plasma to deposit a second portion of the film on the substrate wafer.

23. (Withdrawn) The substrate processing system recited in claim 22, the computer-readable program further including instructions for applying an electrical bias to the substrate while flowing the etchant gas.